(Sn), or indium (In), zinc oxide (ZnO), indium-gallium-zinc oxide (InGaZnO4), indium zinc oxide (Zn—In—O), zinc-tin oxide (Zn—Sn—O), indium gallium oxide (In—Ga—O), indium-tin oxide (In—Sn—O), indium-zirconium oxide (In—Zr—O), indium-zirconium-zinc oxide (In—Zr—Zn—O), indium-zirconium-tin oxide (In—Zr—Sn—O), indium-zirconium-gallium oxide (In—Zr—Ga—O), indium-aluminum oxide (In—Al—O), indium-zinc-aluminum oxide (In—Zn—Al—O), indium-tin-aluminum oxide (In—Sn—Al—O), indium-aluminum-gallium oxide (In—Al—Ga—O), indium-tantalum oxide (In—Ta—O), indium-tantalum-zinc oxide (In—Ta—Zn—O), indium-tantalum-tin oxide (In—Ta—Sn—O), indium-tantalum-gallium oxide (In—Ta—Ga—O), indium-germanium oxide (In—Ge—O), indium-germanium-zinc oxide (In—Ge—Zn—O), indium-germanium-tin oxide (In—Ge—Sn—O), indium-germanium gallium oxide (In—Ge—Ga—O), titanium-indium-zinc oxide (Ti—In—Zn—O), and hafnium-indium-zinc oxide (Hf—In—Zn—O), which are complex oxides thereof.

[0057] The active layer AL includes a channel area in which impurities are not doped, and a source area and a drain area in which impurities are doped at respective sides of the channel area. Herein, the impurities vary according to a kind of thin film transistor, and may be N-type impurities or P-type impurities. When the active layer AL is formed of the oxide semiconductor, a separate passivation layer may be added in order to protect the oxide semiconductor, which is vulnerable to the external environment such as exposure to a high temperature.

[0058] The gate electrode GE is positioned on the active layer AL, and the source electrode SE and the drain electrode DE are positioned on the gate electrode GE and are respectively connected to the source region and the drain region of the active layer AL through contact holes.

[0059] To prevent shorting of the active layer AL, the gate electrode GE, the source electrode SE, and the drain electrode DE, as the elements of the thin film transistor TFT, the first insulating layer CIL is positioned between the elements of the thin film transistor TFT.

[0060] The organic light emitting element OLED includes a first electrode E**1** connected to a drain electrode DE of the thin film transistor TFT through a contact hole formed in the second insulating layer OIL, an organic emission layer OL positioned on the first electrode E**1**, and a second electrode E**2** positioned on the organic emission layer OL.

[0061] The first electrode E**1** may be an anode, which is a hole injection electrode, and may be any one of a light reflective electrode, a light transflective electrode, and a light transmitting electrode. Meanwhile, in another embodiment, the first electrode E**1** may be a cathode, which is an electron injection electrode.

[0062] The organic emission layer OL is positioned on the first electrode E**1**. The organic emission layer OL may be formed of a low molecular organic material or a high molecular organic material such as poly 3,4-ethylenedioxythiophene (PEDOT), or the like. The organic emission layer OL may include a red organic emission layer emitting red light, a green organic emission layer emitting green light, and a blue organic emission layer emitting blue light, wherein the red organic emission layer, the green organic emission layer, and the blue organic emission layer are respectively formed in a red pixel, a green pixel, and a blue pixel to implement a color image.

[0063] The red organic emission layer, the green organic emission layer, and the blue organic emission layer are stacked as the organic emission layer OL in all of the red pixel, the green pixel, and the blue pixel and a red color filter, a green color filter, and a blue color filter are formed in each pixel, thereby making it possible to implement the color image.

[0064] As another example, a white organic emission layer emitting white light is formed as the organic emission layer OL in all of the red pixel, the green pixel, and the blue pixel and a red color filter, a green color filter, and a blue color filter are formed in each pixel, thereby making it possible to implement the color image. In the case of implementing the color image using the white organic emission layer, which is the organic emission layer OL, and the color filter, deposition masks for depositing the red organic emission layer, the green organic emission layer, and the blue organic emission layer on the respective individual pixels, in embodiments, the red pixel, the green pixel, and the blue pixel do not need to be used. The white organic emission layer, which is the organic emission layer OL described in another example, may be formed of one organic emission layer or may include a configuration in which a plurality of organic emission layers are stacked to emit white light.

[0065] As an example, the organic emission layer OL may include a configuration in which at least one yellow organic emission layer and at least one blue organic emission layer are combined with each other to allow white light to be emitted, a configuration in which at least one cyan organic emission layer and at least one red organic emission layer are combined with each other to allow white light to be emitted, a configuration in which at least one magenta organic emission layer and at least one green organic emission layer are combined with each other to allow white light to be emitted, and the like.

[0066] The second electrode E**2** may be positioned on the organic emission layer EL and may be a cathode, which is an electron injection electrode. The second electrode E**2** may be any one of a light reflective electrode, a light transflective electrode, and a light transmitting electrode. The second electrode E**2** is positioned over the entirety of the display area DA of the substrate SUB so as to cover the organic emission layer EL. Meanwhile, in another embodiment, the second electrode E**2** may be an anode, which is a hole injection electrode.

[0067] The first insulating layer CIL includes a first sub-insulating layer IL**1**, a second sub-insulating layer IL**2**, and a third sub-insulating layer IL**3**.

[0068] The first sub-insulating layer IL**1** covers the gate electrode GE and functions to prevent shorting between the gate electrode GE and the source electrode SE. The first sub-insulating layer IL**1** may be formed of at least one layer.

[0069] The second sub-insulating layer IL**2** covers the active layer AL and is positioned between the active layer AL and the gate electrode GE. The second sub-insulating layer IL**2** may function to prevent the shorting between the active layer AL and the gate electrode GE. The second sub-insulating layer IL**2** may be formed of at least one layer.

[0070] The third sub-insulating layer IL**3** is positioned between the substrate **100** and the active layer AL and may function to flatten the surface of the substrate **100** and simultaneously prevent moisture from permeating the substrate **100**.